

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-021491**Date Inspected:** 04-Mar-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** John Pagliero and Steve Jensen**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girder**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 9W/10W side plate 'E1' inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 continuing to perform CJP groove (splice) welding cover pass on the splice butt. The welder was observed perform automatic welding in the 3G (vertical) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3042B-1. The joint being welded has a single V-groove butt joint with backing bar. The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blankets located at the opposite side of the plate prior/during welding. During welding, ABF Quality Control (QC) Steve Jensen was noted monitoring the welding parameters of the welder. During the shift, cover pass welding was completed and the welder has moved to side plate 'E2' of the same OBG and welded the root pass until the ends of the shift.

At OBG 4W/5W LS2 longitudinal stiffener inside, QA randomly observed ABF welder Hua Qiang Hwang ID #2930 perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding root pass to cover pass on one side of the stiffener splice butt joint. The joint has a double V joint preparation that is being welded from one side using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The joint being welded is a high strength plate material HPS 485W which has a thickness of 30mm was root welded using a ceramic backing. The splice joint

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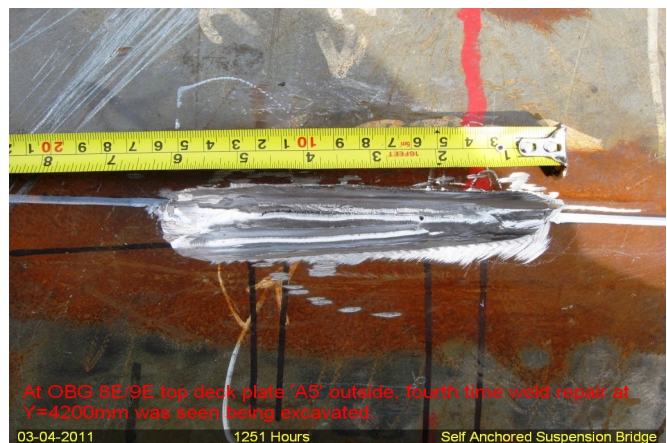
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was preheated and maintained to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blanket located at the opposite side of the plate prior/during welding. During the shift, cover welding at one side was completed and the welder has moved to the other side. The welder back gouged and ground smooth the other side and after its completion, ABF QC Gary Ersham has performed the Magnetic Particle Testing. The welder continued back welding fill pass on the other side. At the end of the shift, cover pass welding of the stiffener was completed. The QA Inspector noted the ABF QC John Pagliero was on site monitoring the in process preheat and welding parameters. During the shift, QA noted ABF QC was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. After the welding completion of the stiffener plates, the welder held and maintained the preheat of 200 degrees Fahrenheit for three hours as required.

At OBG 8E/9E top deck plate 'A5' outside, QA randomly observed ABF/JV qualified welder Wai Kitlai continuing to perform CJP repair welding. The welder was noted welding in 1G (flat) position utilizing SMAW with 5/32" diameter E7018H4R electrode implementing new Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1003 Repair. The new repair procedure includes putting in place a copper backing alongside the typical steel backing bar when the repair excavation is expected to occur at the edge of the steel backing. The fourth time welding repair located at Y=4200 and having boat shape excavation profile of 150mm long x 30mm wide x 19mm deep was tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC John Pagliero was noted monitoring the welder and his welding parameters. QA noted the welder preheating the excavation to more than 150 degrees Fahrenheit prior welding and the parameter during welding was 170 amperes which appears in compliance to the WPS.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the Complete Joint Penetration (CJP) welding of three longitudinal stiffeners and six lifting lug deck access holes butt joint. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the welds and the QC inspection complied with the contract documents.

1. 8W/9W side plate 'C' inside – QA MT verified
2. 3W-PP22-W3-#1 to #4 lifting lug access holes inside – QA MT verified
3. 5W-PP31-W3-#2 & #4 lifting lug access holes inside – QA VT verified



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Summary of Conversations:

No significant conversation occurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer